Please add the following new claims.

A catalyst for polymerization of alpha-olefins, wherein the catalyst comprises a cocatalyst and a catalyst component, wherein the catalyst component comprises a metallocene complex and a support, wherein the metallocene complex is supported on the support, wherein the metallocene complex is defined by formula I or II:

 \mathcal{M}^{1}

$$(G(R)_a)_x MX_y \qquad I$$

$$(R)_a \qquad G_1 \qquad MX_d \qquad II$$

$$G_2 \qquad (R)_b \qquad II$$

wherein:

R groups are equal to or different from each other; R is hydrogen or a radical containing from 1 to 20 carbon atoms; R optionally contains a heteroatom selected from the group consisting of elements from groups 14 through 16 of the periodic table of the elements and boron; at least one R group contains an $OSiR''_3$ group, wherein R'' is selected from the group consisting of: linear C_1 - C_{20} alkyl, branched C_1 - C_{20} alkyl, linear C_3 - C_{20} cycloalkyl, branched C_3 - C_{20} cycloalkyl, linear C_6 - C_{20} aryl, branched C_6 - C_{20} aryl, linear C_7 - C_{20} alkenyl, branched C_7 - C_{20} alkenyl, linear C_7 - C_{20} arylalkyl, linear C_7 - C_{20} arylalkyl, linear C_7 - C_{20} arylalkenyl,

branched C_7 - C_{20} arylalkenyl, linear C_7 - C_{20} alkylaryl, and branched C_7 - C_{20} alkylaryl;

Q is selected from the group consisting of: boron and elements from groups 14 and 16 of the periodic table; when $\mathbf{m} > 1$, Q groups are equal to or different from each other; free valences of every Q are filled with the R group or groups according to a value of \mathbf{c} ; two R groups optionally are bonded to form a ring having from 5 to 8 atoms; \mathbf{m} ranges from 1 to 4;

G groups are equal to or different from each other; G is a cyclic organic group bonded to M through a π bond, G contains a cyclopentadienyl ring that optionally is fused with one or more other rings, or G is an atom selected from the group consisting of elements from groups 15 and 16 of the periodic table;

 G_1 and G_2 are equal to or\different from each other; G_1 and G_2 have the same meaning as G;

M is a metal selected from the group consisting of: elements from groups 3, 4, and 10 of the periodic table, lanthanides, and actinides;

X groups are equal to or different from each other; X is selected from the group consisting of: halogen, hydrogen, OR"', $N(R"')_2$, C_1 - C_{20} alkyl, and C_6 - C_{20} aryl; wherein R"' is selected from the group consisting of: linear C_1 - C_{20} alkyl, branched C_1 - C_{20} alkyl, linear C_3 - C_{20} cycloalkyl, branched C_3 - C_{20} cycloalkyl, linear C_6 - C_{20} aryl, branched C_6 - C_{20} aryl, linear C_7 - C_{20} alkenyl, branched C_7 - C_{20} alkenyl, linear C_7 - C_{20} arylalkyl, branched C_7 - C_{20} arylalkenyl, branched C_7 - C_{20} arylalkenyl, linear C_7 - C_{20} arylalkenyl, linear C_7 - C_{20} arylalkenyl, linear C_7 - C_{20} alkylaryl, and branched C_7 - C_{20} alkylaryl;

 \mathbf{x} is 1 or 2, \mathbf{y} is 2 or 3 in such a way that $\mathbf{x} + \mathbf{y} = 4$; \mathbf{d} is an integer ranging from 0 to 2; and \mathbf{a} , \mathbf{b} and \mathbf{c} are integers from 0 to 10 in such a way that $\mathbf{a} + \mathbf{b} + \mathbf{c} \ge 1$; wherein the metallocene complex is supported on the support by means of a bond resulting from a reaction of the OSiR"₃ group of



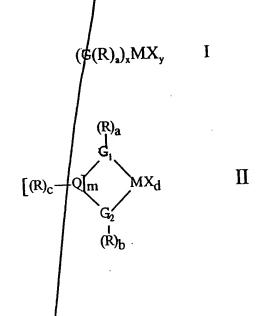
the metallocene complex with a reactive group on a surface of the support; and wherein the OSiR"3 group is not directly bonded to Q when Q is Si.

- 57. A catalyst as claimed in Claim 56 wherein in formula I or II R is selected from the group consisting of: hydrogen, SiR'_3 , linear C_1 - C_{20} alkyl, branched C_1 - C_{20} alkyl, linear C_3 - C_{20} cycloalkyl, branched C_3 - C_{20} cycloalkyl, linear C_6 - C_{20} aryl, branched C_6 - C_{20} aryl, linear C_7 - C_{20} alkenyl, branched C_7 - C_{20} alkenyl, linear C_7 - C_{20} arylalkyl, branched C_7 - C_{20} arylalkyl, linear C_7 - C_{20} arylalkenyl, branched C_7 - C_{20} arylalkenyl, linear C_7 - C_{20} alkylaryl, and branched C_7 - C_{20} alkylaryl; and optionally each R group contains a heteroatom selected from the group consisting of: elements of groups 14 through 16 of the periodic table of the elements and boron.
- 58. A catalyst as claimed in Claim 56 wherein in formula I or II M is selected from the group consisting of: Ti, Zr, and Hf.
- 59. A catalyst as claimed in Claim 56 wherein in formula I or II the R group containing the group OSiR" is selected from the group consisting of: $-CH_2-CH_2-OSiMe_3$, $-CH_2-CH_2-CH_2-OSiMe_3$, $-CH_2-CH_2-OSiMe_3$, $-O-CH_2-CH_2-OSiMe_3$, and $-SiMe_2-CH_2-OSiMe_3$.
- 60. A catalyst as claimed in Claim 56 wherein in formula I G is cyclopentadienyl or indenyl; M is zirconium; \mathbf{x} is 2; \mathbf{y} is 2; R is C_1-C_4 alkyl, wherein at least one hydrogen of one R is substituted with $OSiR''_3$ wherein R" is selected from the group consisting of: Me, Et, and Pr.
- 61. A catalyst as claimed in Claim 57 wherein in formula II M is

zirconium; G_1 and G_2 are cyclopentadienyl or indenyl; R is hydrogen, a C_1 - C_4 alkyl wherein at least one hydrogen of one R is substituted with $OSiR''_3$ or a SiR'_2 - $OSiR''_3$ group, wherein R" is selected from the group consisting of: methyl, ethyl, propyl; $[(R)_cQ]_m$ is H_2C - CH_2 , CRH_cCH_2 , RHC- SiR'_2 , R_2C - SiR'_2 , and SiRR'.

- 62. A catalyst as claimed in Claim 57 wherein in formula II M is titanium; G_2 is an oxygen or a nitrogen atom; G_1 is a cyclopentadienyl, indenyl or fluorenyl ring; $[(R)_cQ]_m$ is H_2C-CH_2 , $CRH-CH_2$, $RHC-SiR'_2$, $R_2C-SiR'_2$, or SiRR'.
- 63. A catalyst as claimed in Claim 56 wherein the support comprises an inorganic solid selected from the group consisting of: silica, alumina silica-alumina, aluminum phosphates, and mixtures thereof.
- 64. A catalyst as claimed in Claim 56 wherein the cocatalyst is selected from the group consisting of: an alkylaluminoxane, boron compounds, and mixtures thereof.
- 65. A process for preparing a catalyst as claimed in Claim 56, wherein the catalyst comprises a cocatalyst and a catalyst component, wherein the catalyst component comprises a metallocene complex and a support, wherein the metallocene complex is supported on the support, wherein the process comprises the following steps:
 - (a) impregnation, under anhydrous conditions and an inert atmosphere at a temperature between -20°C and 90°C, of a solution comprising at least one metallocene complex

on the support, wherein the metallocene complex is defined by formula I or II



wherein:

R groups are equal to or different from each other; R is hydrogen or a radical containing from 1 to 20 carbon atoms; R optionally contains a heteroatom selected from the group consisting of elements from groups 14 through 16 of the periodic table of the elements and boron; at least one R group contains an $OSiR''_3$ group, wherein R'' is selected from the group consisting of: linear C_1 - C_{20} alkyl, branched C_1 - C_{20} alkyl, linear C_3 - C_{20} cycloalkyl, branched C_3 - C_{20} cycloalkyl, linear C_7 - C_{20} alkenyl, branched C_7 - C_{20} alkenyl, linear C_7 - C_{20} arylalkyl, branched C_7 - C_{20} arylalkyl, linear C_7 - C_{20} arylalkenyl, branched C_7 - C_{20} arylalkenyl, linear C_7 - C_{20} arylalkenyl, linear C_7 - C_{20} alkylaryl;

Q is selected from the group consisting of: boron and elements from groups 14 and 16 of the periodic table; when m > 1,

Q groups are equal to or different from each other; free valences of every Q are filled with the R group or groups according to a value of **c**; two R groups optionally are bonded to form a ring having from 5 to 8 atoms; **m** ranges from 1 to 4;

G groups are equal to or different from each other; G is a cyclic organic group bonded to M through a π bond, G contains a cyclopentadienyl ring that optionally is fused with one or more other rings, or G is an atom selected from the group consisting of elements from groups 15 and 16 of the periodic table;

 G_1 and G_2 are equal to or different from each other; G_1 and G_2 have the same meaning as G_3 ;

M is a metal selected from the group consisting of: elements from groups 3, 4, and 10 of the periodic table, lanthanides, and actinides;

X groups are equal to or different from each other; X is selected from the group consisting of: halogen, hydrogen, OR"', $N(R"')_2$, C_1 - C_{20} alkyl, and C_6 - C_{20} aryl; wherein R"' is selected from the group consisting of: linear C_1 - C_{20} alkyl, branched C_1 - C_{20} alkyl, linear C_3 - C_{20} cycloalkyl, branched C_3 - C_{20} cycloalkyl, linear C_6 - C_{20} aryl, branched C_6 - C_{20} aryl, linear C_7 - C_{20} alkenyl, branched C_7 - C_{20} alkenyl, linear C_7 - C_{20} arylalkyl, branched C_7 - C_{20} arylalkenyl, branched C_7 - C_{20} arylalkenyl, linear C_7 - C_{20} arylalkenyl, linear C_7 - C_{20} alkylaryl, and branched C_7 - C_{20} alkylaryl;

x is 1 or 2, **y** is 2 of 3 in such a way that $\mathbf{x} + \mathbf{y} = 4$; **d** is an integer ranging from 0 to 2; and **a**, **b** and **c** are integers from 0 to 10 in such a way that $\mathbf{a} + \mathbf{b} + \mathbf{c} \ge 1$; wherein the $OSiR''_3$ group of the metallocene complex reacts with a reactive group of the support to bond the metallocene complex to the support, thereby forming a resulting solid comprising the metallocene complex supported on the support; wherein the $OSiR''_3$ group is not directly bonded to Q when Q is Si; and

- (b) filtration and washing the resulting solid from step (a) with a solvent comprising an aliphatic hydrocarbon or an aromatic hydrocarbon.
- 66. A process for preparing a catalyst as claimed in Claim 56, wherein the catalyst comprises a cocatalyst and a catalyst component, wherein the catalyst component comprises a metallocene complex and a support, wherein the metallocene complex is supported on the support, wherein the process comprises the following steps:
 - (a) depositing at least one metallocene complex on the support by using a solution comprising a solvent and the metallocene complex to heterogenize, wherein the metallocene complex is defined by formula I or II:

 $[R)_{a}$ $G(R)_{a})_{x}MX_{y}$ G_{1} G_{2} $(R)_{b}$ G_{2} $(R)_{b}$ II

wherein:

R groups are equal to or different from each other; R is hydrogen or a radical containing from 1 to 20 carbon atoms; R optionally contains a heteroatom selected from the group consisting of elements from groups 14 through 16 of the periodic table of the elements and boron; at least one R group contains an $OSiR''_3$ group, wherein R'' is selected from the group consisting of: linear C_1 - C_{20} alkyl, branched C_1 - C_{20} alkyl, linear C_3 - C_{20} cycloalkyl, branched C_3 - C_{20} cycloalkyl, linear C_6 - C_{20} aryl, branched C_6 - C_{20} aryl, linear C_7 - C_{20} alkenyl, branched C_7 - C_{20} alkenyl, linear C_7 - C_{20} arylalkyl, branched C_7 - C_{20} arylalkyl, linear C_7 - C_{20} arylalkenyl, branched C_7 - C_{20} arylalkenyl, linear C_7 - C_{20} alkylaryl, and branched C_7 - C_{20} alkylaryl;

Q is selected from the group consisting of: boron and elements from groups 14 and 16 of the periodic table; when $\mathbf{m} > 1$, Q groups are equal to or different from each other; free valences of every Q are filled with the R group or groups according to a value of \mathbf{c} ; two R groups optionally are bonded to form a ring having from 5 to 8 atoms; \mathbf{m} ranges from 1 to 4;

G groups are equal to or different from each other; G is a cyclic organic group bonded to M through a π bond, G contains a cyclopentadienyl ring that optionally is fused with one or more other rings, or G is an atom selected from the group consisting of elements from groups 15 and 16 of the periodic table;

 G_1 and G_2 are equal to or different from each other; G_1 and G_2 have the same meaning as G;

M is a metal selected from the group consisting of: elements from groups 3, 4, and 10 of the periodic table, lanthanides, and actinides;

X groups are equal to or different from each other; X is selected from the group consisting of: halogen, hydrogen, OR"',



 $N(R"')_2$, C_1 - C_{20} alkyl, and C_6 - C_{20} aryl; wherein R"' is selected from the group consisting of: linear C_1 - C_{20} alkyl, branched C_1 - C_{20} alkyl, linear C_3 - C_{20} cycloalkyl, branched C_3 - C_{20} cycloalkyl, linear C_6 - C_{20} aryl, branched C_6 - C_{20} aryl, linear C_7 - C_{20} alkenyl, branched C_7 - C_{20} alkenyl, linear C_7 - C_{20} arylalkyl, branched C_7 - C_{20} arylalkenyl, branched C_7 - C_{20} arylalkenyl, linear C_7 - C_{20} alkylaryl, and branched C_7 - C_{20} alkylaryl;

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 \mathbf{x} is 1 or 2, \mathbf{y} is 2 or 3 in such a way that $\mathbf{x} + \mathbf{y} = 4$; \mathbf{d} is an integer ranging from 0 to 2; and \mathbf{a} , \mathbf{b} and \mathbf{c} are integers from 0 to 10 in such a way that $\mathbf{a} + \mathbf{b} + \mathbf{c} \ge 1$; wherein the OSiR"₃ group of the metallocene complex reacts with a reactive group of the support to bond the metallocene complex to the support, thereby forming a resulting solid comprising the metallocene complex supported on the support;

- (b) eliminating the solvent; and
- (c) bringing the resulting solid to a temperature between 25 and 150°C.
- 67. A process as claimed in Claim 65, wherein before step (a) the metallocene complex is mixed with a cocatalyst.
- 68. A process as claimed in Claim 66, wherein before step (a) the metallocene complex is mixed with a cocatalyst.
- 69. A catalyst according to Claim 57, wherein in formula I or II M is selected from the group consisting of: Ti, Zr, and Hf.
- 70. A catalyst according to Claim 58, wherein in formula I or II M is selected from the group consisting of: Ti, Zr, and Hf.

- 71. A catalyst according to Claim 57, wherein the support comprises an inorganic solid selected from the group consisting of: silica, alumina, silica-alumina, aluminum phosphates, and mixtures thereof.
- 72. A catalyst according to Claim 59, wherein the support comprises an inorganic solid selected from the group consisting of: silica, alumina, silica-alumina, aluminum phosphates, and mixtures thereof.
- 73. A catalyst according to Claim 60, wherein the support comprises an inorganic solid selected from the group consisting of: silica, alumina, silica-alumina, aluminum phosphates, and mixtures thereof.
- 74. A catalyst according to Claim 61, wherein the support comprises an inorganic solid selected from the group consisting of: silica, alumina, silica-alumina, aluminum phosphates, and mixtures thereof.
- 75. A process as claimed in Claim 65 wherein in formula I or II R is selected from the group consisting of: hydrogen, SiR'_3 , linear C_1 - C_{20} alkyl, branched C_1 - C_{20} alkyl, linear C_3 - C_{20} cycloalkyl, branched C_3 - C_{20} cycloalkyl, linear C_6 - C_{20} aryl, branched C_6 - C_{20} aryl, linear C_7 - C_{20} alkenyl, branched C_7 - C_{20} alkenyl, linear C_7 - C_{20} arylalkyl, branched C_7 - C_{20} arylalkyl, linear C_7 - C_{20} arylalkenyl, branched C_7 - C_{20} arylalkenyl, linear C_7 - C_{20} alkylaryl; and branched C_7 - C_{20} alkylaryl; and optionally each R group contains a heteroatom selected from the group consisting of: elements of groups 14 through 16 of the periodic table of the elements and boron.



- 76. A process according to Claim 65 wherein in formula I or II M is selected from the group consisting of: Ti, Zr, and Hf.
- 78. A process according to Claim 65 wherein in formula I G is cyclopentadienyl or indenyl; M is zirconium; \mathbf{x} is 2; \mathbf{y} is 2; R is C_1-C_4 alkyl, wherein at least one hydrogen of one R is substituted with $OSiR''_3$ wherein R'' is selected from the group consisting of: Me, Et, and Pr.
- 79. A process according to Claim 75 wherein in formula II M is zirconium; G_1 and G_2 are cyclopentadienyl or indenyl; R is hydrogen, a C_1 - C_4 alkyl wherein at least one hydrogen of one R is substituted with $OSiR''_3$ or a SiR'_2 - $OSiR''_3$ group, wherein R" is selected from the group consisting of: methyl, ethyl, propyl; $[(R)_cQ]_m$ is H_2C - CH_2 , CRH- CH_2 , RHC- SiR'_2 , R_2C - SiR'_2 , and SiRR'.
- 80. A process according to Claim 65 wherein in formula II M is titanium; G_2 is an oxygen or a nitrogen atom; G_1 is a cyclopentadienyl, indenyl or fluorenyl ring; $[(R)_cQ]_m$ is H_2C-CH_2 , $CRH-CH_2$, $RHC-SiR'_2$, $R_2C-SiR'_2$, or SiRR'.
- 81. A process according to Claim 67 wherein the cocatalyst is selected from the group consisting of: an alkylaluminoxane, boron compounds, and mixtures thereof.
- 82. A process according to Claim 65, wherein the support

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comprises an inorganic solid selected from the group consisting of: silica, alumina, silica-alumina, aluminum phosphates, and mixtures thereof.

83. A process according to Claim 75, wherein the support comprises an inorganic solid selected from the group consisting of: silica, alumina, silica-alumina, aluminum phosphates, and mixtures thereof.

84. A process as claimed in Claim 66 wherein in formula I or II R is selected from the group consisting of: hydrogen, SiR'_3 , linear C_1 - C_{20} alkyl, branched C_1 - C_{20} alkyl, linear C_3 - C_{20} cycloalkyl, branched C_3 - C_{20} cycloalkyl, linear C_6 - C_{20} aryl, branched C_6 - C_{20} aryl, linear C_7 - C_{20} alkenyl, branched C_7 - C_{20} alkenyl, linear C_7 - C_{20} arylalkyl, branched C_7 - C_{20} arylalkyl, linear C_7 - C_{20} arylalkenyl, branched C_7 - C_{20} arylalkenyl, linear C_7 - C_{20} alkylaryl, and branched C_7 - C_{20} alkylaryl; and optionally each R group contains a heteroatom selected from the group consisting of: elements of groups 14 through 16 of the periodic table of the elements and boron.

- 85. A process according to Claim 66 wherein in formula I or II M is selected from the group consisting of: Ti, Zr, and Hf.
- 86. A process according to Claim 66 wherein in formula I or II the R group containing the group OSiR" is selected from the group consisting of: $-CH_2-CH_2-OSiMe_3$, $-CH_2-CH_2-OSiMe_3$, $-CH_2-CH_2-OSiMe_3$, $-CH_2-CH_2-OSiMe_3$, and $-SiMe_2-CH_2-OSiMe_3$.
- 87. A process according to Claim 66 wherein in formula I G is cyclopentadienyl or indenyl; M is zirconium; \mathbf{x} is 2; \mathbf{y} is 2; R is C_1-C_4 alkyl, wherein at least one hydrogen of one R is substituted with $OSiR''_3$ wherein R" is selected from the group consisting of:

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Me, Et, and Pr.

- 88. A process according to Claim 84 wherein in formula II M is zirconium; G_1 and G_2 are cyclopentadienyl or indenyl; R is hydrogen, a C_1 - C_4 alkyl wherein at least one hydrogen of one R is substituted with $OSiR''_3$ or a SiR'_2 - $OSiR''_3$ group, wherein R" is selected from the group consisting of: methyl, ethyl, propyl; $[(R)_cQ]_m$ is H_2C - CH_2 , CRH- CH_2 , RHC- SiR'_2 , R_2C - SiR'_2 , and SiRR'.
- 89. A process according to Claim 66 wherein in formula II M is titanium; G_2 is an oxygen or a nitrogen atom; G_1 is a cyclopentadienyl, indenyl or fluorenyl ring; $[(R)_cQ]_m$ is H_2C-CH_2 , $CRH-CH_2$, $RHC-SiR'_2$, $R_2C-SiR'_2$, or SiRR'.
- 90. A process according to Claim 68 wherein the cocatalyst is selected from the group consisting of: an alkylaluminoxane, boron compounds, and mixtures thereof.
- 91. A process according to Claim 66, wherein the support comprises an inorganic solid selected from the group consisting of: silica, alumina, silica-alumina, aluminum phosphates, and mixtures thereof.
- 92. A process according to Claim 84, wherein the support comprises a porous inorganic solid, and wherein the porous inorganic solid is an inorganic oxide selected from the group consisting of: silica, alumina, silica-alumina, aluminum phosphates, and mixtures thereof.
- 93. A process as claimed in Claim 66, wherein in step (b) the solvent is eliminated through evaporation.
- 94. A process for preparing a copolymer, the process comprising

contacting the catalyst claimed in Claim 56 with a monomer and a copolymer to copolymerize the monomer and the comonomer and to produce the copolymer.

- 95. A process as claimed in Claim 94, wherein the comonomer is an alpha-olefin selected from the group consisting of propylene, butene, hexene, octene, and 4-methyl-1-pentene.
- 96. A process as claimed in Claim 94, wherein the monomer comprises ethylene.
- 97. A process as plaimed in Claim 95, wherein the monomer comprises ethylene.
- 98. A process as claimed in Claim 94, wherein the copolymerization occurs at a temperature between 30°C and 100°C.
- 99. A process as claimed in Claim 94, wherein the copolymerization occurs at a temperature between 120°C and 250°C.
- 100. A process as claimed in Claim 94, wherein the copolymerization occurs at a pressure in a range from atmospheric pressure to 350 MPa.
- 101. A process as claimed in Claim 94, wherein the copolymerization occurs in a solution, in a suspension, in a gas phase, or in a mass.
- 102. A process for preparing a polymer, the process comprising contacting the catalyst claimed in Claim 56 with a monomer to polymerize the monomer and to produce the polymer.
- 103. A process as claimed in Claim 102, wherein the monomer comprises ethylene.

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- 104. A process as claimed in Claim 102, wherein the polymerization occurs at a temperature between 30°C and 100°C.
- 105. A process as claimed in Claim 102, wherein the polymerization occurs at a temperature between 120°C and 250°C.
- 106. A process as claimed in Claim 102, wherein the polymerization occurs at a pressure in a range from atmospheric pressure to 350 MPa.
- 107. A process as claimed in Claim 102, wherein the polymerization occurs in a solution, in a suspension, in a gas phase, or in a mass.
- 108. A process as claimed in Claim 66, wherein in the metallocene complex the OSiR" group is not directly bonded to Q when Q is Si.

REMARKS

This response is being submitted within three months after the shortened one-month statutory period set for responding to the Office Action mailed on April 10, 2000. Therefore, a petition and fee for a three-month extension are enclosed herewith.

This response cancels previously pending Claims 1-12, 14, and 19-